

**REMARKS****Claim Amendments.**

Upon entry of the amendments claims 1-16, 19-39, and 42-56 will be pending. Independent claims 1 and 32 have been amended to incorporate the frequency limitations of dependent claims 40 and 41. Dependent claims 17, 18, 40 and 41 have been cancelled. New dependent claims 53-56 have been added. Reconsideration of the present application is respectfully requested in light of the above amendments to the application and the following remarks.

**Items 1-3.** The Patent Office rejected claims 1-52 under 35 U.S.C. 102(b) as being anticipated by Cady (US Patent 6,193,677). In view of the amendments to independent claims 1 and 32 applicants respectfully traverse this rejection.

First, Cady does not sweep. Each of the three oscillators operates at only one selected frequency. (Col. 4, lines 1-2, lines 7-9, and lines 13-14.) Cady neither suggests nor discloses sweeping as a form of modulation. The modulator/summer 26 of Cady is a simple summer or multiplexer: "The three waveforms may be combined in a simple additive manner, or may be alternated or combined separately." (Col. 2, lines 58-60.) Although some non-linearity may be present in the modulator/summer 26 to produce additional higher and lower frequencies (See Col. 4, lines 14-17), Cady does not disclose sweeping the frequency (or even stepping among the listed, preferred frequencies) but states that the frequency is to be one of the listed, preferred frequencies (Col. 4, lines 1-20).

The Patent Office alleged that "Cady teaches a 'microprocessor 24 with memory to permit the entry and storage of complex wave form programs which the applying practitioner may develop.'" (Col. 2, lines 61-64.) However, this is merely a suggestion that a practitioner go out and experiment, and provides neither guidance nor direction for the practitioner as to what a "complex wave form" is or which ones should be investigated. In view of Cady at Col. 2, lines 54-60, Cady's only suggestion for a "complex wave form" would be limited to different patterns of alternating or separately combining the outputs of the three oscillators. Cady neither suggests nor discloses sweeping or stepping.

Next, Cady only discloses operation in the range of 100 to 300 Hz. (Abstract; Col. 2, lines 35-53; Col. 4, lines 1-20 and lines 52-55) Cady neither suggests nor discloses a “lower-frequency sweep generally having frequencies less than approximately 100 Hz” used in combination with a “higher-frequency sweep generally having frequencies greater than approximately 100 Hz”. Even if Cady disclosed sweeping, which it clearly does not, as shown above, Cady does not suggest or disclose the frequencies of the lower-frequency sweep. In fact, Cady clearly teaches that the preferred frequencies listed and used are above this low frequency band (Col. 2, lines 51-53).

Therefore, as Cady neither suggests nor discloses sweeping, and as Cady neither suggests nor discloses a lower-frequency sweep generally having frequencies less than approximately 100 Hz, or even the use of frequencies below approximately 100 Hz at all, it is respectfully submitted that independent claims 1 and 32, and therefore their respective dependent claims, are not anticipated by Cady.

In addition, as Cady neither suggests nor discloses sweeping, and as Cady neither suggests nor discloses a lower-frequency sweep generally having frequencies less than approximately 100 Hz, it is respectfully submitted that independent claims 1 and 32, and therefore their respective dependent claims, are not obvious in view of Cady.

**Items 4-9.** The Patent Office rejected claims 1-52 under 35 U.S.C. 103(a) as being unpatentable over Nedwell (US Patent 6,190,337) in view of Van Brunt et al. (US Patent Publication No. 2004/0097842A1). In view of the amendments to independent claims 1 and 32 applicants respectfully traverse this rejection.

The Patent Office alleged that Nedwell teaches: “a ramp generator circuit 16 that sweeps the frequency between a lower limit and an upper limit, column 3, lines 19-25”; “a typical frequency range of 40 to 160 Hz”; and “an additional frequency of about 16 Hz or a range from 16 Hz upwards may be employed... column 4, lines 10-16.”

However, Nedwell prefaces that sentence with an important restriction beginning on Col. 4 at line 13: “Alternatively or additionally a frequency of about 16 Hz, or a range from about 16 Hz upwards, may be employed ...” (emphasis added.) Thus, when the complete sentence is read, Nedwell discloses using either (1) a single (fixed) frequency of about 16 Hz along with a single

sweep band (40 Hz to 160 Hz), or (2) a single sweep band from 16 Hz to 160 Hz. Nedwell neither suggests nor discloses using two different sweep bands, with the lower-frequency sweep generally having frequencies less than approximately 100 Hz and the higher-frequency sweep generally having frequencies greater than approximately 100 Hz.

The Patent Office alleged that "Van Brunt teaches ...any number or range of frequencies. The processor provides a high frequency sweep, a normal frequency sweep and a low frequency sweep." However, Van Brunt only discloses operation in the 5-20 Hz range, (Van Brunt, Page 3, Paragraph 0050), not "any number or range of frequencies", not operation even above 20 Hz, and certainly and clearly not operation above 100 Hz. Further, Van Brunt only discloses stepping or sweeping through a single frequency band, whether it be a "low", "normal", or "high" frequency band (Page 3, Paragraphs 0051-0052; also see Fig. 4), all of which are below 20 Hz. Van Brunt neither suggests nor discloses two different frequency sweep bands. Thus, although Van Brunt discloses sweeping in a single band, below 20 Hz, Van Brunt neither suggests nor discloses sweeping in two different bands, the lower-frequency sweep generally having frequencies less than approximately 100 Hz and the higher-frequency sweep generally having frequencies greater than approximately 100 Hz.

Combining Nedwell and Van Brunt would thus provide a single sweep band of 5 Hz (Van Brunt) to 160 Hz (Nedwell), but would not provide two separate frequency sweeps, the lower-frequency sweep generally having frequencies less than approximately 100 Hz and the higher-frequency sweep generally having frequencies greater than approximately 100 Hz.

Clearly, any attempt to combine the various parts of the cited art to produce the claimed invention could only be based on impermissible hindsight using the teachings of the present application as a guide.

Therefore, it is respectfully submitted that independent claims 1 and 32, and therefore their respective dependent claims, are not anticipated by either Nedwell or Van Brunt, and that independent claims 1 and 32, and therefore their respective dependent claims, are not obvious in view of Nedwell and Van Brunt.

**Dependent Claims.**

In addition to the grounds stated above, the following dependent claims are further patentable over the cited art for the reasons stated below.

Dependent claims 3-5 and 34-36 require the provision of a lower-frequency sweep with a plurality of higher-frequency sweeps, a higher-frequency sweep with a plurality of lower-frequency sweeps, or a plurality of lower-frequency sweeps with a plurality of higher-frequency sweeps. None of the cited art suggests or discloses two different sweep bands where one band has a single sweep with the other having a plurality of sweeps, or both sweep bands having a plurality of sweeps.

Dependent claims 16 and 39 require the transducer to vibrate with an approximate amplitude of 5 to 500 microns. None of the cited art suggests or discloses any particular amplitude but merely mentions suggested pressures for forcing air into and out of the lungs and/or keeping the lungs partially inflated.

Dependent claims 22 and 45 require that at least one of the lower-frequency sweep and the higher-frequency sweep is a downward frequency sweep. In addition to the cited art only disclosing a single sweep, not two different sweeps, the prior art neither suggests nor discloses the use of a downward frequency sweep, as opposed to an upward frequency sweep.

Dependent claims 23 and 46 require that a lower-frequency sweep and a higher-frequency sweep be provided essentially simultaneously. In addition to the cited art only disclosing a single sweep, not two different sweeps, the prior art neither suggests nor discloses that two different frequency sweeps can be provided simultaneously.

Dependent claims 26 and 49 require that at least one of the lower-frequency sweep and the higher-frequency sweep have a substantially square waveform. Other than Cady suggesting that complex waveforms are possible, and providing no enabling guidance on what type of complex waveform is preferred, the cited art neither suggests nor discloses a square waveform.

New dependent claims 53 and 54 require a sequence of at least two output sets, an output set having at least one lower-frequency sweep and at least one higher-frequency sweep. Although the cited art suggests a repeating sequence of a single sweep, none of the prior art suggests or discloses the output having two or more sets of different-frequency sweeps.

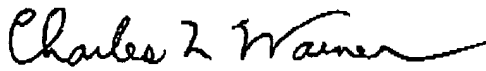
New dependent claims 55 and 56 require a sequence of at least two output sets, an output set having a plurality of lower-frequency sweeps and at least one higher-frequency sweep, a lower-frequency sweep being an upward frequency sweep from approximately 5 Hz to approximately 25 Hz, and a higher-frequency sweep being a downward frequency sweep from approximately 5.5 kHz to approximately 100 Hz. Although the cited art suggests a repeating sequence of a single sweep, none of the prior art suggests or discloses the output having two or more sets of different-frequency sweeps or that sweeps should be in different directions, upward or downward.

Therefore, it is respectfully submitted that dependent claims 3-5, 16, 22, 23, 26, 34-36, 39, 45, 46, 49, 53-56 are further patentable over the cited art, singly and in combination.

#### CONCLUSION

It is believed that the above is completely responsive to the Office Action and that the claims, as amended, are now in condition for allowance, and Applicants respectfully request the same. If the Examiner should have any questions, or suggestions which will put this application in condition for allowance, a telephone call to the undersigned is respectfully requested.

Respectfully submitted,  
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